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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,090	07/22/2003	George A. Scheele	JHU1710-4	8783

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EXAMINER	
LE, EMILY M	
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1648	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/625,090	SCHEELE ET AL.	
	Examiner	Art Unit	
	Emily Le	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/16/2007+05/02/08*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28,31,34-44,49-51,53,55,56,58 and 59* is/are pending in the application.

4a) Of the above claim(s) *50,51,55,56,58 and 59* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28,31,34-44,49 and 53* is/are rejected.

7)☒ Claim(s) *40-42 and 53* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/19/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-27, 29-30, 32-33, 45-48, 52, 54, 57 and 60-72 are cancelled. Claims 28, 31, 34-44, 49-51, 53, 55-56 and 58-59 are pending. Claims 50-51, 55-56 and 58-59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected viral species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 31, 2006. Claims 28, 31, 34-44, 49 and 53 are under examination.

2. It should be noted that Applicant's listing of withdrawn claims is incomplete. In the submission filed 05/02/08, Applicant notes that claims 50-51, 55-56 and 58 are withdrawn. This is incorrect. The listing should also include claim 59, which was previously withdrawn and noted in paragraph no. 1 as withdrawn.

Claim Objections

3. Claims 40 and 53 are objected to because of the following informalities: the claims are duplicative of one another. Appropriate correction is required.

4. Claims 41-42 are objected to because of the following informalities: The claims recite "the envelope virus". This recitation is inherently provided by the herpes virus recited in the independent claim. However, to provide consistency among claims, it is suggested that "the envelope virus" be amended to "the herpes virus".

5. Additionally, claim 41 is further objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the

claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 41 requires that the titer of the virus be measured after beta-cyclodextrin be provided to the mammal. However, this requirement is clearly set forth in independent claim 28. Therefore, it is found that claim 41 fails to further limit claim 28.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. The rejection of the claims under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is withdrawn in view of Applicant's submission.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 28, 31, 34-44, 49 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace et al.[1]

The claims are directed at reducing herpes viral load in a mammal comprising identifying a mammal suspected of having been infected with herpes virus in an interstitial space, providing said mammal an amount of a pharmaceutical composition consisting essentially of beta-cyclodextrin and measuring the reduction in viral load of

herpes in the interstitial space of the mammal. Claim 31, which depends on claim 28, requires that the beta-cyclodextrin be 2-OH-propyl-beta-cyclodextrin. Claim 34, which depends on claim 28, requires that the method further comprises administering an amount of a cholesterol lowering agent effective to reduce the level of serum cholesterol in the mammal. Claim 35, which depends on claim 28, requires that the beta-cyclodextrin be provided intravenously. Claim 36, which depends on claim 35, requires that the beta-cyclodextrin be provided bolus injection. Claim 37, which depends on claim 35, requires that the beta-cyclodextrin be infused into the mammal over a period of at least two minutes. Claim 38, which depends on claim 37, requires that the beta-cyclodextrin be provided in at least two intravenous administrations separated by an interval of at least one hour. Claim 39, which depends on claim 37, requires that the beta-cyclodextrin be provided in at least four intravenous administrations separated by an interval of at least 12 hours. Claim 40, which depends on claim 28, requires that the beta-cyclodextrin be administered with at least one antiviral agent. Claim 41, which depends on claim 28, requires that the method comprises measuring the titer of the envelope virus after providing the beta-cyclodextrin. Claim 42, which depends on claim 28, requires that the method comprises measuring the titer of the envelope virus before providing the beta-cyclodextrin. Claims 43-44, which depend on claim 28, requires that the method comprises measuring an immune response in the mammal against the virus after and before, respectively, providing the beta-cyclodextrin. Claim 49, which depends on claim 28, requires the herpes virus to be human herpes virus 1. Claim 53,

[1] Wallace et al. US PreGrant Pub No. 2003/0220294 A1, priority claimed to US Provisional Application

which depends on claim 28, requires that the beta-cyclodextrin provided with at least one antiviral agent.

Wallace et al. teaches beta-cyclodextrin. The beta-cyclodextrin that Wallace et al. teaches include 2-OH-propyl-beta-cyclodextrin. [Lines 9-20, page 6 of Provisional Application and paragraph 0026 of US PreGrant Pub, in particular.] Wallace et al. teaches that beta-cyclodextrin is effective in reducing herpes viral load/titer. [Figure 1, in particular.] The herpes virus that Wallace et al. teaches is human herpes virus 1, HSV-1 (herpes simplex virus-1.

Wallace et al. did not administer beta-cyclodextrin or 2-OH-propyl-beta-cyclodextrin to a mammal suspected of being infected with herpes virus. However, it would have been prima facie obvious for one of ordinary skill in the art, at the time the invention was made, to administer 2-OH-propyl-beta-cyclodextrin, a beta-cyclodextrin to a mammal infected or suspected of being infected with herpes virus. One of ordinary skill in the art, at the time the invention was made, would have been motivated to do so to reduce the viral load of herpes virus in said mammal. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because Wallace et al. demonstrated that beta-cyclodextrin is effective in reducing herpes viral load/titer.

Additionally, as shown in Figure 1, Wallace et al. also measured herpes viral load after in vitro treatment of cells infected with herpes virus with beta-cyclodextrin to determine the effectiveness of beta-cyclodextrin against herpes virus. Thus, at the time

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No. 60/366429, filed March 21, 2002.

the invention was made, it would have been prima facie obvious for one of ordinary skill in the art to measure herpes viral load after beta-cyclodextrin is administered to a mammal. One of ordinary skill in the art, at the time the invention was made, would have been motivated to do so to determine the effectiveness of beta-cyclodextrin against herpes virus. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because the measurement of viral loads is routinely practiced in the art. It is noted that the claims require that the infection be in the interstitial space of the mammal, in the instant case, the virus would necessarily occupy the interstitial space of the mammal.

It would also have been prima facie obvious for one of ordinary skill in the art to measure herpes viral load before beta-cyclodextrin is administered to a mammal. One of ordinary skill in the art, at the time the invention was made, would have been motivated to do so to provide a basis for determining the effectiveness of beta-cyclodextrin against herpes virus. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because the measurement of viral loads is routinely practiced in the art.

Wallace et al. also teaches that the administration of beta-cyclodextrin with an antiviral agent. Wallace et al. teaches that beta-cyclodextrin in combination with acyclovir exhibits an additive or even synergistic effect against herpes virus, specifically the herpes simplex virus-1. Thus, at the time the invention was made, it would have been prima facie obvious for one of ordinary skill in the art to administer an antiviral agent with beta-cyclodextrin to a mammal infected or suspected with being infected with

herpes virus. One of ordinary skill in the art, at the time the invention was made would have been motivated to do so to exert and additive or even synergistic effects against herpes virus. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because additive and synergistic activities with the combination of antivirals and beta-cyclodextrin has been demonstrated by Wallace et al.

Regarding the limitations recited in claims 35-39, which are directed at various administration and treatment protocols, it should be noted that alteration in treatment and administration protocols are routinely practiced in the medical field. Thus, it would have been prima facie obvious for one of ordinary skill in the art, at the time the invention was made to administer the composition by any known methods and set up a treatment protocol for the administration of the composition. One of ordinary skill in the art, at the time the invention was made would have been motivated to do so to determine a workable or optimal administration and treatment protocol. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because the determination of a workable or optimal administration and treatment protocol is routinely practiced in the art.

With regard to the limitation of claim 34, which requires that the method further comprises administering an amount of a cholesterol lowering agent effective to reduce the level of serum cholesterol in the mammal, it should be noted that Wallace et al. teaches that saturation of the binding sites of beta-cyclodextrins with cholesterol abolishes the anti-herpes activity of beta-cyclodextrin. Hence, at the time the invention

was made, it would have been prima facie obvious for one of ordinary skill in the art to reduce the level of serum cholesterol in the mammal by administering a cholesterol lowering agent. One of ordinary skill in the art, at the time the invention was made, would have been motivated to do so to minimize the saturation of the binding sites of beta-cyclodextrins with cholesterol. One of ordinary skill in the art, at the time the invention was made would have had a reasonable expectation of success for doing so because Wallace et al. establishes that cholesterol binding to beta-cyclodextrin abolishes the anti-herpes activity of beta-cyclodextrin.

Additionally, while Wallace et al. does not measure the immune response in a mammal before and after administration of beta-cyclodextrin, it should be noted that Wallace et al. does disclose methods of measuring the immune response in a mammal, including antibody titer. Thus, at the time the invention was made, it would have been prima facie obvious for one of ordinary skill in the art to measure the immune response in a mammal before and after administration of beta-cyclodextrin. One of ordinary skill in the art, at the time the invention was made would have been motivated to do so to determine the effectiveness of beta-cyclodextrin against herpes virus. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because the measurement of immune response is routine practiced in the art.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. The provisional rejection of the claims on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claim 26 of copending

Application No. 10/637793 (U.S. PreGrant Patent No. 20050015847) is withdrawn in view of the submitted terminal disclaimer.

12. Claims 28, 31, 34-44, 49 and 53 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/605037(U.S. PreGrant Patent No. 20070088000), in view of Wallace et al.

The claims of the instant patent application are directed at reducing herpes viral load in a mammal comprising identifying a mammal suspected of having been infected with herpes virus in an interstitial space, providing said mammal an amount of a pharmaceutical composition consisting essentially of beta-cyclodextrin and measuring the reduction in viral load of herpes in the interstitial space of the mammal.

The claims of the copending application are directed at treating a mammal infected with herpes virus infection with the administration of beta-cyclodextrin.

The difference between the applications is: the copending patent application is directed at treating infection whereas, the instant patent application is directed at reducing viral infection. However, the specification of the copending patent application provides that treatment also encompasses reduction of viral load. Hence, both applications are directed to a method of reducing viral load.

The other difference noted is: the copending patent application does not require the measurement of viral load after beta-cyclodextrin is administered. However, as shown in Figure 1, Wallace et al. also measured herpes viral load after in vitro treatment of cells infected with herpes virus with beta-cyclodextrin to determine the effectiveness of beta-

cyclodextrin against herpes virus. Thus, at the time the invention was made, it would have been prima facie obvious for one of ordinary skill in the art to measure herpes viral load after beta-cyclodextrin is administered to a mammal. One of ordinary skill in the art, at the time the invention was made, would have been motivated to do so to determine the effectiveness of beta-cyclodextrin against herpes virus. One of ordinary skill in the art, at the time the invention was made, would have had a reasonable expectation of success for doing so because the measurement of viral loads is routinely practiced in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

It is noted that in response to the rejection, Applicant argues that the rejection is incorrectly applied because the instant application and the copending application do not share a common ownership.

Applicant's submission has been considered, however, it is not found persuasive. Contrary to Applicant's assertion, the rejection was properly applied. An obviousness double patenting rejection applies when there are different inventive entities with at least one common inventor and no common assignee. The Office directs Applicant to Chart II-B, MPEP 804.

Conclusion

13. No claims are allowed.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Le whose telephone number is (571)272-0903. The examiner can normally be reached on Monday - Friday, 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce R. Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Emily Le/
Primary Examiner, Art Unit 1648

/E. L./